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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/717,672

11/21/2003

Alexandre Corjon

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EXAMINER

HOLZEN, STEPHEN A

ART UNIT

PAPER NUMBER

3644

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/717,672	Applicant(s) CORJON ET AL.	
	Examiner Stephen A. Holzen	Art Unit 3644	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 12, 13, 21, 22, 31, 32, 34 and 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8-11, 14-20, 23-30, 33 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 5/8/2006 have been fully considered but they are not fully persuasive.
2. Applicant's arguments regarding the 112 2<sup>nd</sup> rejections are persuasive and these rejections are withdrawn.
3. The examiner never used the word "inherent" and therefore these arguments are off point and therefor moot.
4. Applicant has argued Bilanin et al (6,042,059) does not qualify as a reference because of its publication date. The examiner disagrees, Bilanin et al has an earliest effective filing date of Feb 20 1997.
5. Applicant has argued that "Ortega et al" does not qualify as a reference because it wasn't published until April 2002. The examiner agrees with this assertion and will not use it as evidence as what was known prior to applicant's earliest effective filing date.
6. Applicant has argued that his claims "necessarily" excite an instability mode. The examiner cannot find the word "necessarily " in the claims and therefore this argument is moot.

7. Applicant has argued that the prior art must teach every claim limitation. The examiner agrees in part, and disagrees in part. The examiner agrees that all the **structural** claim limitations must be taught. Applicant has failed to consider MPEP 2114 that says:

*While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-2 (Fed. Cir. 1997); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); Ex parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).*

8. Phrases such as “periodic perturbation”, “wavelength”, “instability mode” do not define the apparatus. What they do define is the air and fluid flow that result from flying the aircraft and expelling a jet of fluid from a device on the wing. Since these are characteristics of fluid flow they do not limit the scope of “an aircraft” in a structural sense.

9. Phrases such, as “configured to excite” and “to accelerate” do not limit any structural element of the aircraft. These phrases limit the fluid flow. Therefore these

limitations only limit the aircraft apparatus to the capability of performing the intended functions of “exciting” and “accelerating”.

10. The phrase “device being configured to generate” only limits the device to be manufactured and arranged in a manner that allows it to be capable of generating a periodic perturbation. The prior art teaches a device that is manufactured and arranged to be capable of generating a periodic perturbation.

11. The claims, as presently written only have two elements. (1) a wing (2) a perturbation devices. The wing is not further limited by any structure, and only limited by its intended use. To read on the first element of the claim, the prior art need only teach a wing that forms a vortex when a first and second eddy merge during flight.

The perturbation device has one structural limitation and one functional limitation. The one structural limitation is --its location--. To read on this portion of the claim, the prior art must teach a device and that it be located adjacent an aer of creation of the first eddy. The one functional limitation is that the device --must be capable of generating a period perturbation.--. The prior art need only teach that it is manufactured and arranged so that it is capable of generating a period perturbation.

Since the “periodic perturbation” is not a structural element or a structural limitation of another structural element, the recitations following it, merely serve to limit what all the perturbation device must be capable of generating. The prior art teaches these capabilities.

12. Furthermore, applicant has failed to consider the teachings of **MPEP 2115**:  
“Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, “[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). In In re Casey, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) teaches that: “the manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself.” Therefore the claimed expression relating to the aircraft to the airflow around thereof during operation are of no significance in determining patentability of the apparatus claim. The inclusion of fluid and air flow recitations does not impart patentability to the claims. The manner in which the apparatus is supposed to be utilized is not germane to the issues of patentability of the aircraft itself.

13. Re – Claims 2 and 11: Applicant should remember that it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse 86 USPQ 70. It would have been obvious to one having ordinary skill in the art to re-locate the jet adjacent the aircraft flaps for the purpose of increasing aircraft efficiencies.

***Election/Restrictions***

14. Newly submitted claims 31-32, 34, and 35 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the applicant has previously claimed a different species. Claims 1 and 2 are drawn to a species of invention that are exterior to the wing/flap. The originally examined claims required that the perturbation device be disposed at least partially ADJACENT a flap or wing. The new claims require that the perturbation device be completely disposed WITHIN a flap or wing.

The related inventions are distinct inventions as claimed since they do not overlap in scope, i.e. are mutually exclusive, the inventions as claimed are not obvious variants and the invention as claimed have a materially different mode of operation. See MPEP 806.05(j).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 31, 32, 34 and 35 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Notes to Applicant***

15. The subject matter of claims 31, 32, 34 and 35 would have been considered new matter, if they were not withdrawn by original presentation. The applicant has previously claimed a perturbation device adjacent to the flap/wing. Now the applicant is

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claiming in combination with this perturbation device, a second perturbation that is within the wing/flap. The applicant has not disclosed a combination of two perturbation devices, one within the flap and one exterior to the flap. Furthermore the device, as originally disclose only ejected fluid adjacent a flap. The mutually exclusively embodiment claimed in claims 31, 32, 34 and 35 requires a combination between the ejection of fluid adjacent to the flap/wing and the ejection of fluid from within the flap/wing. This combination was not included and is not found within the originally filed specification.

- 16. Claims 1-36 are pending
- 17. Claims 3-7, 12, 13, 21, 22, 31, 32, 34, 35 are withdrawn.
- 18. Claims 1, 2, 8-11, 14-20, 23-30, 33 and 36 are rejected.

***Claim Rejections - 35 USC § 102 & 103***

- 19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



21. Claims 1, 2, 8-11, 14-20, 23-30, 33 and 36 are rejected under 35 U.S.C. 102(b) as anticipated by Yuan (3,936,013) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yuan in view of ordinary skill in the art.

Re – Claim 1, 8, 9, 10, 14, 15, 16, Yaun teaches an aircraft having two fixed wings (11) on each side of the fuselage (12). As the aircraft moves through the air, the wings cause the air to move such that they form vortices behind the aircraft. Yaun then goes on to disclose a tube (21) for blowing a jet of fluid through an orifice 22. The extended tube is attached to the wing 11 and at least a portion thereof extends therein (see Figure 2). Fluid from the fluid source enters a conduit 23 and ejects from an orifice opening 22.

Yuan teaches that the location of the extended tube can be designed according to the configuration of the wing planform which would allow the vortex control system to operate most efficiently for a given configuration of the wings. (see Col. 3, lines 63+ - Col. 4, lines 3.) Yaun further teaches that the extending tube may be attached to the wing tip at a location anywhere between the leading and trailing edges (see Col. 4, lines 16-18).

It is, therefore, the examiners position that Yuan teaches that the tube can be located at almost any position that results in increased aerodynamic efficiency; and if

Yuan does not specifically teach this, it would be obvious in light of the teachings of Yuan to locate the tube at almost any position that results in increased aerodynamic efficiency since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse 86 USPQ 70.

Regarding Claims 2, 11: the jet device is either disclosed as being next to the inherent and necessarily aircraft flaps of Yaun or would have been obvious to locate adjacent thereto for the reasons of increasing vortex destruction efficiencies.

The examiner believes this is the case since it is old and well known in the art (as taught by Bilanin et al, US 6,042,059) that the destruction of vortices is "enhanced by introducing time-varying disturbances" which "excite the instabilities" associated with an eddy. The goal of the excitation is to produce a time-varying motion in the position of the centroid of eddies of one or more vortex pairs at particular frequencies to start a process that leads to rapid break up of the vortices. Excitation of the centroid is particularly effective for a destruction of a vortex wake. (see Col. 4, lines 42-51). The examiner concludes then that the wavelengths generated by Yaun's jets are exciting an instability mode of the eddies such that they accelerate the destruction of the trailing vortices.

In the alternative, should Yuan not necessarily teach such a step, or "structural limitation", such would be obvious to one having ordinary skill in the art (ordinary skill

in the art is evidenced by ~~both Ortega and Bilanin et al teachings~~ to design the jet 72  
such that it is configured for generating a wavelength capable of exciting at least one  
instability mode of a co-rotating eddy to accelerate the destruction of the vortex for  
the purpose of reducing the kinetic energy (turbulence) of a vortex.

Re – Claims 16-20, 24-30, 33 and 36: These claims do not limit the aircraft  
structure. (see paragraphs 7-12 above). Yuan teaches the claimed capabilities  
outlined in these claims.

Expressions relating the apparatus to contents thereof during an intended  
operation are of no significance in determining patentability of the apparatus claim.”  
Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, “[i]nclusion of  
material or article worked upon by a structure being claimed does not impart  
patentability to the claims.” In re Young, 75 F.2d 996, 25 USPQ 69 (CCPA 1935)  
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patentability of the machine itself.” Therefore the claimed expression relating to the  
aircraft to the airflow around thereof during operation are of no significance in  
determining patentability of the apparatus claim. The inclusion of fluid and air flow  
recitations does not impart patentability to the claims. The manner in which the

apparatus is supposed to be utilized is not germane to the issues of patentability of the aircraft itself.

While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d, 1429, 1431-2 (Fed. Cir. 1997); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); Ex parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

22. Alternatively Claims 33 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan as applied to claims 1 and 10 above, and further in view of ordinary skill in the art. The speed at which the fluid is capable of being ejected is nothing more than a result effective variable. (variable = speed; result = vortex destruction). It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boeson, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one having ordinary skill in the art, at the time the invention was made to eject the fluid at a speed equal to or great than the

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speed of the aircraft for the purpose of increasing aircraft efficiencies (or landing field efficiencies).

### ***Conclusion***

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sah



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